AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

VOL. IV. APRIL, 1869. No. 10.

[For the American Bee Journal.]

Management and Mismanagement.

Let us see whether we cannot explain two methods of bee management, and ascertain which we like the best:

Mr. A. belongs to the second class of bee-keepers. He counts the number of swarms he has in the spring, without any regard to their condition. He meets Gallup, or some other putty-head, about the last of April, and the first salutation is—

"Good morning! I am glad to see you. How are your bees doing?"

"Oh, they are doing first rate. How are yours getting along?"

"Well, you see, I wintered over twenty-five swarms; all came through in excellent condition; but they do not appear to be doing anything now. I am afraid several of them have lost their queens. I do wish that you would come down and see them, and tell me what is the matter."

We go, of course.

"Here is one of the swarms that I think have lost their queens."

We step up to the hive and take off the cap, and the condition of the hive is *this:* The honey-board is left off, and there is a piece of dry comb laid on the frames; no signs of any honey in the comb or in the hive. We take out the frames, one by one. There is a small stock of bees and a good-looking queen, but no brood of any description.

"Well, Mr. A., you see here is a good queen."

"Yes, I see her, but what is the reason she don't breed?"

"Can your hens breed without something to eat?"

"Why, man alive, I have been feeding them all the spring. It cannot be that they are starving. Once or twice a week I have given them a little honey or some dissolved sugar."

"Yes, I see you have fed them enough to keep them from actually starving to death, and that is all."

We examine several other swarms, and find more than one half of the number in nearly the same condition.

"Well, Mr. A., as I was named after a prophet, allow me to prophesy a little. If this is your method of managing bees, you can never expect any success in beekeeping."

"Allow me to explain; when the honey harvest commences, these bees have to expend all their force and energy in increasing their numbers; and by the time they are prepared to gather honey, the harvest is past, (especially in such a season as the last,) and they will starve by the first of December; or, if wintered through, they are in the same condition next spring."

This Mr. A. is no imaginary person. We have seen hundreds of such beekeepers.

Now for Mr. B.'s management. He has, we will say, twenty-five swarms, and they are in what he calls an excellent condition on the last of April. Now let us examine them. Here is the first swarm we come to. We take off the cap, and behold the honey-board is on and fits close; all upward escape of animal heat is carefully guarded against, (you perceive this is precisely the opposite of Mr. A.'s.) We take off the honey-board, and behold the first thing we discover is bees in any quantity. We take out the frames and examine. Here is an abundance of brood in all stages, from the egg to the perfect bee, and a considerable amount of honey yet. Every day that they can fly out, they are carrying water and pollen; and when the honey harvest comes, they are ready to take advantage of it; and they will store enough at least to winter on and last until the honey harvest comes again, in any season that I ever saw.

"Now, Mr. B., tell us how you manage to have such good luck?" (This Mr. B. belongs to the third class of beekeepers, and consequently has no secrets in beekeeping.)

"Well, sir, when I set out my bees in the spring, I overhauled every swarm, and examined every comb; hence I knew their exact condition. One swarm, which I thought was rather weak, I stimulated in the cellar, and set them to breeding very rapidly, two or three weeks before setting them out. I found three swarms out of the twenty-five that were not very well supplied with honey; and I equalized their stores by ex-

changing combs with swarms that had more honey than was necessary. I could have fed them, but I prefer to have my bees self-sustaining."

"Well, how do you manage them through the summer and fall, so as to have them come out in good condition in the spring, as yours have this spring?"

"I practice artificial swarming altogether, and use a hive with small frames, and one that I can contract or enlarge to suit any sized swarm."

"Oh, that is one of Gallup's whims."

"Well, suppose it is, so long as it works well in practice, and Gallup does not charge anything for his whims. I keep all my old swarms strong, and when I make a new one, whether I commence with one frame or more, I keep that strong also. I am careful not to enlarge my hive too fast, and if I get only six frames filled with comb, I allow the bees to fill that with brood and honey; and then if the honey harvest is cut off, I have a good swarm to winter. The dimensions of their hive is twelve inches deep, twelve inches from front to rear, and nine inches wide; and each comb is occupied with boes, brood, and honey. Or if they fill eight frames, I have got a hive just twelve inches square, which, when wintered in the cellar, will winter just as well as a full hive; and with a young prolific queen, they make an excellent stock to store honey the next season, after filling their hive. Now, you perceive, that if I had enlarged this hive faster, and caused the bees to fill it with comb in such a season as the last, I should have had a hive with plenty of comb and bees, but no honey, for they would have consumed all their honey in building comb and raising extra bees. I wish to have you thoroughly understand this theory. If you have four frames in your hive, and the bees crowded on these four frames, all their labors can be carried on, out doors and within. But if you enlarge it to eight frames, with only the same number of bees, it requires so many more of the workers to stay at home and keep up the animal heat, that none can be spared to labor outside. This is one reason why so many complain that artificial swarms do not work as well as natural ones. Then, too, in the latter part of the season I manage to get rid of all the old queens, or queens that are liable to fail early next season; and get young prolific queens in their places. And here let me remark that, years before I practiced artificial swarming, I used to take surplus queens from third and fourth swarms to supplant old queens; and I never failed in getting prolific queens. Third and fourth swarms frequently come out with from two to six queens each. If my swarms were in the condition of Mr. A.'s, I would commence feeding early in the spring, and I would feed all they would consume, till they commenced gathering honey, and then they would be in a condition to repay me for all my trouble—for if you have bees of the right age to gather honey, they will gather it if there is any to be found. But, in feeding, I should be careful not to feed so lavishly as to have the bees store the surplus in the cells, and then, further, I think I would be careful not to let them get into such a condition again. If I am to feed bees at all, I prefer doing it in the summer, rather than in the winter. And I want my hive large enough in the breeding apartment to contain, when filled with comb, honey enough for any emergency. I would sooner have too much than not enough, for if I had too much, I could easily convert it into bees and comb, or empty it out with the honey-emptying machine. We will suppose that I kept on stimulating my bees after the honey-harvest was cut off last season. I should either have had to feed them large quantities, or they would have kept on breeding and consumed all their stores. Then I should have had to feed all winter, and again this spring, or let them starve. Thus you will perceive that you must know how to feed, and when to feed, or all your profits will be used up in feed. Mr. Quinby, in his Mysteries of Bee-keeping, says that you may destroy a swarm by feeding—that is, if you have a swarm which has some honey on hand in the spring, and commence feeding early, getting a numerous brood on hand; and then cease feeding before they can gather anything. A swarm thus treated, or rather mal-treated, would starve; whereas if it had been let alone it might have become a profitable stock. I quote from recollection, as the book is lent out. And what Mr. Quinby says you will find pretty reliable. All the fault I find with the book is he did not tell us enough. But there it is again. There would have been nothing left for the BEE JOURNAL, if he had told the whole. Mr. J. M. Price, in the January number of the BEE JOURNAL, says that Gallup, by his own confession, does feed bees, &c. In all probability I feed as little as any practical beekeeper in the United States; for I hold that bees ought to be, and can be, so managed as not to need feeding. In fact, bees ought to be self sustaining; and they will be, if properly managed; and then, when there comes a good season, we may expect profit. It will not take all summer to pay for a dead horse. As I said before, it is necessary to know how to feed, when to feed, and what you are feeding for; and then you can do as you please. Mr. A's bees will be troubled with moths without number, because he has so many weak swarms and so much unguarded comb. Whereas, with B.'s management, the moths will be, as Novice says, "*like angel's teeth and hen's visits*," few and far between. Because, if B. has a small swarm it is a strong one, for, with his management, all the combs they have are occupied with bees, at all seasons when moths can work. I did not find a moth of any description in my thirty-five swarms last summer; and there were swarms only a short distance from me entirely destroyed by the moth; and that, too, where the swarms had good queens, for I examined them. If you do not wish to follow B.'s method or management, stick to the principle; for the principle is correct, and the principle is what we are after. A very small swarm of bees, in the right kind of hive, and with the right management, can be made into the very best of swarms. In the management of bees there are certain principles that must always be kept in view. There are a great many good methods; but those prin-

ciples must not be violated if we would expect to succeed. You can easily see that A., with *his* management, will not receive as much profit from his twenty-five swarms or stocks, as B. would from twelve, with his management."

On reading this article over, I find that you might as well say Gallup in place of B. How does it happen that A., living on one side of the street, has any quantity of swarms destitute in fall; while Gallup, on the opposite side, has increased to double the number that A. has, and still Gallup's swarms have abundance of honey for wintering?

ELISHA GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.]

Upward Ventilation.

I have groped in the darkness of ignorance and self-conceit, and want to tell apiarians how I discovered the truth.

A skilful bee-hunter told me that bees with upward ventilation were always dry and in good condition in winter. One of my neighbors took two hives from their stands, set them on the ground, took honey from the top, and, the bees being in the way, the tops were not entirely closed. The winter was hard, and the snow drifted over the two hives on the ground; but when it melted, the bees worked out of the tops of the hives, and were in fine condition. All on the stands—five or six—were dead.

But I could find no upward ventilation in hundreds of bee trees which I examined. Bees would not work in a cap with a fly hole, or not air tight. When I gave them a fly-hole near the top of the hive, they kept it stuffed with bees, to retain the warmth, closed with propolis, and used those lower down. One fall I bought a barrel of Hoosier honey, followed the bee-hunters collecting the bees, and observed the small swarms were in narrow well protected cavities. I united the remaining bees, making twelve swarms, put them in hives in the cellar, with some combs to cluster on, bored holes in the tops, poured honey in rings around these holes, and tapped on the hives. The bees came up and fed once in two or three days, keeping the holes stopped when not feeding. They all soon died with dysentery, except one that had honey in the combs. This proved that eating honey exposed to cold which checks perspiration, causes dysentery. In the light of this experience I ought to have known why bees are opposed to upward ventilation, and would not work in caps unless there were tight and closed fly-holes at the top.

I settled here in 1834. Wild bees were plenty, and I made it a point to examine every tree I found cut, size and shape of cavity, size and position of fly-hole, and thought with Quinby that they were miserable places for bees, and that I could contrive better. I had the dyspepsia then and slept but little, and spent the waking hours of night, year after year, planning hives; but always discovered some defect in my plans. I was ignorant of the nature and laws of matter, and became conscious of my inability to devise anything reliable. Down the vista of the past I saw the wrecks of human invention disappear in the dark waters of oblivion. One night, as I lay thinking of my hopeless labors, an overwhelming conviction, sudden as the lightning's flash, resolved all my doubts in a moment. It seemed impious to suppose that Infinite Wisdom and Goodness had not furnished the bee a home adapted to its needs. It should be our pattern, with modifications, to adapt it to our wants. Then my soul was filled with light.

> "There was a revelation there;
> Truths, before not understood,
> Crowded on a startled ear."

I had now a base for future discovery—a standard by which I detected error—a test by which I determined every doubt—an unchanging faith in Nature, as the outward manifestation of the Deity. Thenceforth the native home of the bee was my admiration and study; and, years after, when every American authority was recommending almost unlimited upward ventilation in winter, and the bees were dying with cold and dysentery, I endeavored, through the pages of the *Prairie Farmer*, to expose the error, and hoped to see it dying among its worshipers.

John M. Price, in the May number, page 218, wants to know what killed his bees. I suppose they were smothered. In cold hives a fly-hole at the bottom may do in mild weather; but the first cold snap a great many are lost every winter. Compelled by the cold, the bees creep together closely; the outer bees are chilled, and if they remain in this condition thirty-six hours, or freeze, they never recover. By some kind provision, before they reach the freezing point, a disturbance ensues; perhaps the central bees are distressed for want of air, and struggling to obtain it, they break through the torpid crust. Panting and gasping for breath, they need a great supply of air, and if they get it much heat is generated; the torpid bees are covered, revived, and go to the centre for honey. If not, the bees perish. If the hive is too broad and cold, or the swarm too small, the torpid bees may not all be roused, and some will die. The colder the hive, the more air is needed to generate heat; and the more air we give, if it escapes at the top, carrying off the heat as fast as generated, the colder will be the hive and the more frequent and severe the disturbance and suffering, wearing out the bees. Thus small swarms consume honey enough to winter a large one, and perish before spring. Heat and moisture are elements of life, but cold is death.

Now, Mr. Price, let us look at the divine pattern, the hollow tree. You know bees succeed here, as a rule, without upward ventilation. This is a stubborn fact—a knockdown argument that upward ventilation men have not the manliness to acknowledge, and will never have the ability to set aside. But we find here a fly-hole on the side, often from three to five inches in diameter, not liable to be choked up, admitting an abundant supply of air for all emergencies, without carrying off the heat; a narrow cavity enabling the bees to command all their stores;

a cone-shaped top, in which a small swarm may build comb rapidly, cover more brood, and spare a larger gathering force; good non-conducting walls, with less inside surface in proportion to the space enclosed, and therefore a warmer and better hive, as far as the bees are concerned, than ever was invented by human conceit. The windows of our dwellings are covered with frost, but we put water on the stove. The plaster is too warm to condense moisture. Condensed moisture is needed when bees are confined. They dwindle to a handful in dry spells in Texas, in summer. The Arab muffles his face and falls to the ground, to escape the dry air of the desert, for water is essential to animal life. For more on this subject, I refer Mr. Price to the *Prairie Farmer*, Nov. 14, 1861, page 321; March 15, 1862, page 164.

In warm hives bees cluster loosely, and air circulates freely. They sleep most of the time, requiring little honey or air. Their lives are not materially shortened by the lapse of time while in repose, both food and air are obtained without disturbance, and they are fresh and vigorous in spring. Horizontal ventilation allows the heat to escape from the lower combs, preventing mould, while retaining heat and moisture above, giving the bees control of the honey and preventing it from candying.

Will Mr. Price tell why a tight top is not as necessary to brood in January, February, and March, as in April, May, and June? How vapor makes dew on a summer night, and rises out of a cold hive in winter? Why bees need more air in cold spells, to keep them warm, and in hot spells to keep them cool? How upward ventilation cools them when combs melt in the sun? Why our teachers cannot agree as to the right form and size of a hive? If they know the right, why are they always repudiating their previous teachings? Destitute of scientific knowledge, have I not a right to expect these men of collegiate attainments to explain the apparent inconsistencies of their positions as regards well known facts, and give some logical reasons for the faith they hold? What right have conservators of the public weal to allow an ignorant, crack-brained farmer to mislead the public?

In my former communication, when I wrote, if the bees had upward ventilation, they would have suffered in the spring, the printer inserted the word *not*, thus reversing my meaning. The BEE JOURNAL has a numerous list of able practical contributors. Many of us are fearful all wisdom will die with us. You have allowed each to blow his whistle. Your editorial course is just and liberal, and the JOURNAL must be sustained.

My bees here have not honey enough for winter. I had 150 pounds of cap honey in Iroquois, and took 200 pounds out of the hives, and purchased 100 pounds more to winter these here.

F. H. MINER.

LEMONT, ILL., Dec. 24, 1868.

Honey does not candy from cold alone, without some other concurring circumstances.

[For the American Bee Journal.]

The New Hive.

I believe in progression; and to-day, if I have an idea in advance of what I had yesterday, with sufficient candor I shall acknowledge it. I once recommended the common box and caps, as sufficient for all our wants in a bee hive. When movable combs were presented, had I rejected them and obstinately adhered to the old idea, I should have lost much. Mr. Langstroth has the honor of introducing to the people of this country the movable comb hive in one form, and has covered the improvement with a patent. Others have made changes, and have also obtained patents. I want a hive for a specific purpose, and differing from all.

First, and most important, I want to control swarming, and to *prevent* it—not by giving extra room, and then guessing they will not swarm. I want to be certain. I want space on the inside to hold all the bees as they increase, and give room to work advantageously. I want to open the hive frequently; and do not want the frames separated at their sides, bottoms, and tops; but connected, to prevent the bees from making any little pieces of comb outside, to interfere with the necessary manipulations. No shallow chamber, but the surplus boxes on the top. A suspended frame must necessarily be supported by the sides or ends of the hive. I want it arranged for frames to stand directly on the bottom board, so that I can remove the outer case, and let the surplus boxes at the sides, and the strips of tin connecting the frames, form the hive proper.

When the case is removed, the combs can be handled without crushing or even pinching a bee, or marring the surface of a single comb. Such a hive I have completed. For myself, I prefer it to any I have yet seen. I am asked why I do not get it patented. There are several reasons. One is, it will not pay. Mr. Langstroth has tried it fourteen years—through one whole term, and claims that he is not remunerated yet. Could I expect to fare any better? Some one would make a little alteration—it might be an improvement. I might think it an infringement. Litigation in the U. S. Court might be expensive. I should be quite likely to imagine that I had reached perfection; and that, with me, would be the end of all progress. Whenever a person begins to think and talk of a hive as *my* hive, there is great danger of his being so blinded as not to see advantages in any other. Should any see advantages in the description that I have given, and wish to obtain them, I have no objection; but I do not feel that I could afford much time to explain or defend.

M. QUINBY.

ST. JOHNSVILLE, N. Y.

In some parts of Surrey, (England,) as at Dorking, the first migration from the parent hive is called a *swarm;* the next is a *cast;* while the third increase in the season, goes under the name of a *cote.* This latter is also called a *spindle* in some of the middle counties of England.

[For the American Bee Journal.]

"Honor to Whom Honor is Due."

In the April No. 1868, of the BEE JOURNAL, page 200, Mr. Baldridge, of St. Charles, Ills., expresses a little anxiety to give honor "to whom honor is due." He wishes to know, "as a matter of apistical history," who first used "double tiers of boxes," on the top of the hives.

Notwithstanding the delay in answering him, I shall claim the original idea. When Mr. Langstroth visited me in the summer of 1856 and acknowledged the plan new to him, I had been using surplus honey boxes thus for several years. Mr. B. says—"thus it seems that Mr. Q. does not attach much importance to the *discovery*, or he would, without question, have had more to say about it." Because one is not putting in claims continually for what is taken without as much as "by your leave, sir," he seems to think it all fair. Since Mr. B. expresses an anxiety to give honor where it is due, I hope he will review some of his instructions in practical bee culture, and then judge to whom, in some cases at least, honor is due.

I have now discovered, relative to surplus honey boxes, something very, *very* much more important than "two tiers" of boxes on the top. And that is, if boxes are placed at the side of the combs, and no division thicker than a narrow strip of glass, the bees will enter and work more readily, a week or ten days sooner, than if compelled to travel an inch or more from the combs of the hive to get into the boxes, and then five or six inches more to the top of the box to begin their work. I can put in boxes enough by the side of the combs of my hive to hold eighty pounds, and enough for sixty more on the top without the double tier.

A prosperous colony that has not swarmed, in a copious yield of honey, will store as fast in nearly all the boxes at once, as in a single set when placed at some distance from the body of the hive.

This remark closes Mr. B.'s article: "In many parts of the West every strong colony, if kept from swarming, needs two sets of boxes." I would say that in many parts of Central New York, when kept from swarming, they need three or four. And now I propose to tell Mr. B., and others, how a strong colony may be kept from swarming. Although this abundant room will have a tendency to discourage swarming, it is not by any means to be depended on to prevent it. And when it has been practiced for ten or fifteen years, and he wishes to know where it originated, he may be enabled to find the record in his diary. It will be the more necessary to put it there, as this, like other things, *will not be covered by a patent.*

It is only necessary to place, through the swarming season, a box twenty inches square, four deep, with a piece of tin or glass two inches wide, on the top, projecting inward. This prevents the queen from creeping over, she being unable to hold fast on the under side, and having her wings clipped, she is prevented from flying out. After an effort of this kind, she will return to her hive, and the bees with her. A movable comb hive is needed, that it may be opened once in ten days and all queen cells removed, to prevent her being superseded by a young queen. Or, should it be desirable to rear a young queen in her place, allow one cell *only* to remain. A little before it matures, remove the old queen. When the young one commences laying, find her and clip one of her wings, and all is safe from loss by swarming.

M. QUINBY.

ST. JOHNSVILLE, N. Y.

[For the Bee American Journal.]

Dividing Bees—Straight Combs.

Mr. Baldridge, on page 90 of the BEE JOURNAL, vol. IV, advertises a small book that he has in preparation, "on getting straight combs and making artificial swarms, without looking up the queen—there being but one exception." Price not stated. If said book is to contain but these two ideas, the price should be moderate. If he cannot afford to give those two things to the public, I think, if his demands are not extravagant, that a club might be formed to purchase them, and present them to the readers of the JOURNAL. It would save expense of publication certainly, and it *might* save the author some annoyance perhaps. Even after he has done his best, and fancied that he had given a new and valuable idea, some one might have so little sympathy with his pet plan as to make such unfeeling remarks as may be found on page 90 before mentioned—"Well, sir, if my plan were no better than that, I would keep still and never divulge it; for that is of but very little value." Having some experience, I can fancy what his feelings will be. What a pity that one's own case cannot stand on its own merits, without disparaging another's. Was it even good policy, Mr. B., to represent my plan as of but "very little value," because your "plan" need only be very little above good for nothing, to be superior to mine? On the contrary, had you represented mine as very good, and yours as infinitely better, you would have greatly enhanced the importance of your own invention. Perhaps it will be well to consider this in the next advertisement.

We want this book, if we are to have it, before the season for building combs. If delayed too long, some one may possibly get a similar idea and publish it to the world, and take from the book half its value, or, what might be still worse, claim it as original. And a further reason for haste, I am not sure until I procure his method, but my friend Hetherington, of Cherry Valley, New York, has a method superior to his, of dividing, or making artificial swarms, without being necessitated to look up the queen, even in the exceptionable case of one swarm. It can be applied to the box hive; can make eight artificial swarms in an hour, on an average; and, with movable combs, more. With his permission, I may give it some time. Mr. H. has probably sold more surplus honey of his

own raising the past season than any person in the United States. I mention this to show that he has a system of practice that is successful.

M, QUINBY.

ST. JOHNSVILLE, N. Y.

[For the American Bee Journal.]

Dividing Bees.

Friend Fairbanks has a few remarks on page 116 of the JOURNAL, on dividing bees, and gives the practice of Mr. Wedge.

Mr. Wedge's practice, if written out in detail, would be successful even in the hands of a novice, and does away with the finding of the queen. The main objection, as presented, is that the mode is *too slow and too complicated.* We want a plan that is more simple still.

I hope Mr. Fairbanks and others will analyze this subject thoroughly, so as to simplify our manipulations in dividing bees, as much as possible. Many of us are not so far advanced that we can learn nothing more by careful and well digested *thought* in this department of bee culture.

By a close analysis of my system of dividing bees, I find that *in no case* do I need to find the queen. This is quite an important discovery, as it does away with that *one* "exception." My system enables me to divide bees very rapidly, and it would not be boasting to say that, by it, I can easily divide *two* colonies in the same time and with less trouble than *one* by the mode given by Mr. Fairbanks.

M. M. BALDRIDGE.

ST. CHARLES, ILLS.

[For the American Bee Journal.]

Queries.

What is the best comb-guide, and how best made?

What kind of guide does Mr. J. M. Price use to get such straight combs?

In Mr. Gallup's article on the Multiplication of Stocks, (BEE JOURNAL, vol. 4, p. 133,) in in forming the seven new stocks, would he pursue the same course to cause the bees to remain that he did with the first swarm made?

CANADA. QUERIST.

HOW THE BEES MAKE HONEY.—Were the following, copied from a late English work, but true, what vast quantities of honey might be *manufactured* by a strong colony of bees, if a cart-load of oatmeal were placed within their reach, and regularly replenished:

"The pollen or dust of flowers is the substance with which the bee covers itself, and sucks in, afterwards to be deposited in the form of honey, which is the natural secretion of the bee, *as milk is of the cow.* The bees deposit in their crop, or honey bag, which is an expansion of the gullet, and from this receptacle they disgorge it again when they return to the hive; it being, in the interval, somewhat altered by admixture with the liquids which are secreted in the mouth and crop of the insect."

[For the American Bee Journal.]

Queries and Remarks.

MR. EDITOR:—I have carefully read every number of the AMERICAN BEE JOURNAL that has been published. I find many articles contained in its pages very amusing, as well as many that are interesting and instructive. Now I wish to ask you and some of your able contributors whether it is a fact that queen bees, in their larval state, are fed with food differing in composition from that fed to worker larvæ? Has there ever been a careful analysis made of what is called royal jelly, and of that not quite so royal which is fed to worker larvæ? Is it a fact that queen bees can be produced, under any circumstances, in less than ten days after a queen has been removed from a hive, unless the bees had previously started queen cells, to supply themselves with a young queen?

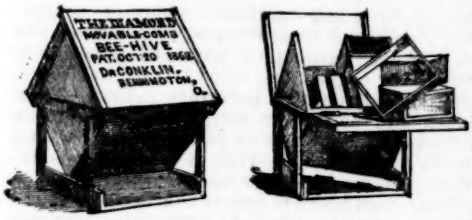
Since the spring of 1860 I make queen raising a special and prominent part of my business, and have never yet been able to produce a queen in less than ten days, usually in from fourteen to sixteen days, as I almost invariably use new laid eggs for propagating queens. Your contributor, Mr. Gallup, gives us through the JOURNAL several instances of queens hatching in seven and eight days from the time the old queens was removed from the hive. Our best American as well as European authors give the time for queens to hatch at eight days after being sealed up. According to my experience they are correct in this statement.

Friend Gallup also tells us that queens die of old age when only three or four months old. All animated creation is subject to accidents, disease, and death. If a child dies when only a few months old, that does not prove that old age has overtaken it. There are many causes for queen bees dying. I will give you my experience of one cause—which is, injudicious or too frequent handling. The queen will sometimes become frightened; the workers discovering her fright and agitation, will seize her by the legs and wings to hold her. While thus held she sometimes commences piping, and the bees will then cluster upon her, and frequently hold her in this situation until she dies from suffocation, or is so badly injured that she is thenceforward worthless. If a person desires to examine or exhibit a queen frequently, it would be well for him to have an observatory hive, with glass sides, to contain only one comb. In this way the queen could be seen at any time, without the risk of losing a valuable one.

COLERAIN, MASS. WM. W. CARY.

In the East, even in countries producing sugar in abundance, honey is extensively employed for the preservation of fruits, which in their ripe state in those hot climates would rapidly lose their fullness of flavor were they not thus protected—honey there being esteemed superior to sugar in the circumstance of its not crystalizing by reason of the heat, and also from its applicability to this use in its natural state.

The bees are a pacific people that labor for our good; and in return we should interest ourselves for them.—WILDMAN.



[For the American Bee Journal.]

The Diamond Moveable Frame Hive.

MR. EDITOR :—As I promised, in the December number, to give the readers of the JOURNAL a view of the hive I invented several years ago and patented last October, I herewith send you the electrotype.

The idea first came into my mind of using a diamond shaped frame, in the summer of 1862, while using a triangular shaped hive of Mr. Flanders, and noticing his claims and the advantage of tipping the hive, so as to have one corner or angle of the frame point upward when prepared for winter. Acting upon the idea, I tacked the top of two of his triangular frames together, having one angle point up and the other down, giving it the appearance of a diamond shape with the bar across the middle. I fitted the frames of two hives together in that way, and then inverted the empty hive and placed it over the frames for a cap. It gave me no place for surplus honey boxes, but it made a splendid hive for brood chamber; and my bees did so well in it, that I improved on it in cheapness of construction, by adopting the rectangular frame and square box or case, as you see, having the frames but partially (say two thirds) fill the hive, and leaving a space on the two upper sides of the frame under the lids or covers for super boxes.

I have two styles of rectangular frames in use. I first made the frames of three-quarter inch square strips, cutting the ends in a mitre box, so that one edge or angle of the frame would be against the hive, and the other would form a Λ shape for comb guide, securing them at equal distances apart by bent wire saddles, as in the triangular frame hive of Mr. Flanders. The bees in building comb will follow down the angle of the frame, commencing at the upper part or angle, and the combs will be built straight in the frame every time, "no exceptions." I then tried the flat frames, say three-eighths or half-inch thickness, letting them rest on cleats or strips at the side angles of the frames. And, now, to secure straight combs in these flat frames, without the triangular comb guides, was the question. Aaron Benedict, a Quaker friend, of this place, while raising Italian queen bees on Kelley's Island, in 1866 and 1867, told me that his friend with whom he boarded, Mr. Charles Carpenter, became interested in bees as well as grapes, and in making some new hives and frames, he used a marking guage along the center of the frames, and filled the crease or mark with bees wax, and the bees built the combs straight in the frames every time, commencing along the line of wax. I therefore adopted that idea, and find they have built every comb straight, and I have reason to believe that there is "no exception" to this rule also.

From specification of Patent No. 83,257, dated October 20, 1868. "This invention relates to a bee hive so constructed that the case and the frames therein are arranged obliquely to the table or platform on which the hive rests. A represents a frame in which is secured the hive B. Said hive is a rectangular or otherwise angular box, and stands on the platform C of the frame on the vertex of the angle of two of its sides, as shown in the drawing. The upper sides are hinged to the case at the side angle of the same, so that they may be opened from the top or ridge, whereby access is had to the interior of the hive, and which doors or covers serve as a roof for the protection of the same. Or the box may be divided horizontally through the middle, and the upper half removed for access to the inside. In the lower angles of the interior of the hive is arranged a series of rectangular comb frames, ("I use twelve.") Said frames are each supported in position by brackets, cleats, or other device, whereby they are held from contact with the sides of the hive and each other. The frames occupy a little more than one-fourth of the interior of the hive, and that the lower angle or section; whereas the rest of the hive is occupied by the honey boxes, placed upon and in immediate connection with the frames—a communication being established between the two, by means of bee passages cut in the sides of the boxes next to the frames. C, the platform referred to, serves as an alighting board. At the lower angle of the hive is the bee passage of half an inch the whole length of the hive, contracted or closed by the movable strip secured by a button. The cleat across the hive horizontally keeps the ends from warping, and also serves for a convenient handle for lifting the hive. Said doors or covers are cleated across the ends, and the upper one across the top; the cleats being half an inch wider than the thickness of the doors, to keep the doors from warping, and also to serve as a cornice, shutting down over the edge of the hive.

By placing the hive in the peculiar oblique position shown, it is easily kept clean by the bees, as all the dirt and waste falls to one point, the lower angle of the chamber, and passes out of the hive. By placing the movable frames in a correlative angle with the box or chamber, and but partially filling the same, leaves a large space on the two upper sides of the frames for honey boxes, (if we prefer them to the honey-emptier,) to which access is conveniently had, for removal or for inspection, by the folding doors or roof. The instinct of the bee leads it commence building at some angle, and that the most elevated or remote from the main entrance. To provide for this instinctive tendency of the creature, the oblique position of the frames offers such an angle to their wants. The upper one being the point from which they proceed to build the comb, is suited to either a large or small swarm, as the bees concentrate the heat in the upper point and thereby save all

the wax; and as they store the upper part of the frame with honey or food, it leaves the main body of the frame for brood chamber, and secures a strong stock. The heat of the bees ascending concentrating in the upper angle of the hive, that portion is therefore kept warm, so that their stores are rendered accessible to the bees in the coldest weather. It will be observed that the honey boxes above the frames (if we use them) have the same angular point for the concentration of heat and the commencement of comb-building, as the frames. Hence, in this hive, the bees find every advantage which their instincts and necessities require in angularity of structure, instead of "tipping the hive," space warmth, thorough ventilation, and facility for keeping the hive clean.

What I claim as my improvement is:

1. The square or angular case B, folding roof or doors D, when the case is elevated upon the vertex of the angle of its sides, in the manner and for the purpose specified.

2. The angular frames F, when arranged within the case B, so that the vertex of the angles of said frames shall coincide with the vertex of the angles of the case, in the manner and for the purposes set forth.

3. The honey boxes *g g*, frames F, doors D, and case B, combined and arranged in relation to each other, in the manner and for the purpose substantially as described."

A. V. CONKLIN.

BENNINGTON, OHIO.

[For the American Bee Journal.]

Bee Pasturage.

That sufficient and continued pasturage for bees, in every location, is the great desideratum for the successful and profitable culture of bees, by every apiarian, both on the large and the small scale, few persons can deny. Our attention is called to this subject by Giles B. Avery, in his article on Alsike clover and other crops for bee pasturage. (See AMERICAN BEE JOURNAL, vol. 3, page 151.) Well, if we can but obtain the half of what Mr. Avery claims, from the appropriate amount of pasturage, our gain will be immense, if adopted by the bee-keeping public. He says—"We give it as our opinion that if every farmer would put one half of the land now seeded to grass, into Alsike clover, bees might be very profitably multiplied in our country an hundred fold, and each hive furnish many times its present profit, and quite as many cattle sustained by the arrangement as at the present time."

It is quite evident that if we make the right disposition of our crops, we can both benefit our bees and other stock at the same time; and I think it is our duty to do so, or suffer the loss of the bees we have on hand.

Again, Mr. Mangold (A. B. JOURNAL, vol. 3, page 168) says—"In view of the fact that bee pasturage differs very much in different sections of country, and that it is desirable to furnish supplies for the bees at all times during the working season, or from spring to fall, bee-keepers should on all occasions encourage the introduction and cultivation of honey producing plants and forage crops." A season like that of 1868 particularly demands attention to the above suggestion, since "from the beginning of July onward pasturage rapidly diminished, and the want of rain, with drought, soon constrained the bees to resort to their winter stores for support." This, of course, would instinctively lead them to cease rearing brood in sufficient numbers to supply the loss of population continually going on during the working season, by death or otherwise. And hence the cold season coming on finds the colony too weak to generate animal heat sufficient to keep them from chilling to death, even with stores enough at hand to keep them for months longer, if the proper warmth could be kept up. *For the want of sufficient pasturage, then, we have this failure.* Shall we suffer it to be repeated, without an effort to save our bees and make them profitable?

Mr. J. H. Thomas, in his "*Canadian Bee-keepers' Guide*," page 66, says—"The prosperity of bees, in any locality, much depends upon the amount of bee pasturage. In some localities it is abundant from early spring until late in the fall, nature having lavishly bestowed there her wild flowers. In other localities it is quite different. The section of country where I reside does not abound with wild flowers; and, in the fall especially, the bee pasturage is quite limited. This difficulty may be easily obviated, by the more extensive sowing of buckwheat and the introduction of Swedish white clover (the Alsike)." The foregoing gives the evidence and experience of friend Thomas in bee pasturage; and it is worthy of our attention.

Mr. Harbison, in his work on "*Bees and Bee-keeping*," says:—It is of the utmost importance for the success of an apiary that it should be located in a neighborhood where bees can readily find an abundant supply of good pasturage. The success of bee-keeping depends greatly on this. As well might a stock-grower expect to make his cattle profitable, without supplying them properly with food, as to suppose bees will live, thrive, and be of benefit to their owners, without obtaining constant supplies of pollen and honey, in some way, from spring to fall, with but little if any intermission. No person can fail to see that Harbison's evidence coincides, in every particular, with the preceding—showing clearly that we must supply this pasturage or lose our bees, and gain no reward for having owned them, but, on the contrary, loss of time and expense.

I next turn to K. P. Kidder's "*Secrets of Bee-keeping*," page 56. He says—"Connected with the cultivation of bees, it is essential that we understand the true conditions that most favor its properity. That these may be known, and in a great degree perfected by the hand of man, we are quite certain." "It is known that the only food of the bees is the nectar and pollen of flowers, and that different varieties produce these deposites in greater or less abundance." "Then, if we would prosper in an endeavor to multiply the species with success, we must cultivate those plants and trees, (where nature does not spontaneously produce them,)

that will yield these flowers longest and secrete the greatest amount of saccharine matter within the reach of the bee."

E. Kretchmer, in his valuable "*Bee-keepers' Guide Book*," says—"Able writers are constantly encouraging the cultivation of trees,) and we must join them in their effort." Speaking of the Alsike clover, he says—"Yet its greatest advantage for bee pasturage is an equally valuable one, and no bee-keeper should hesitate to obtain a package of seed. Kidder says of it—"This perennial plant, which is being cultivated to some extent in different parts of the country, is considered valuable for cattle, sheep, and horses, and makes excellent bee pasturage.

Quinby says--"A honey-producing country may be like a grazing region. One field may pasture ten times as many cattle as another; and the same difference may be true of pasturage for bees." And speaking of the clover, buckwheat, and basswood sources of honey, he says—"Where all three are abundant, there is the true Eldorado of the apiarian."

We have in the *American Agriculturist* for 1868, page 18, the following communication from one of the Bidwell Bros. He says—"We found only six apiaries where natural forage was abundant throughout the season, and this was in small apiaries in isolated districts. Adjacent to thirty-two apiaries flowers were sown to cover deficiences, and these were by far the most successful apiaries we visited, making double the surplus honey, compared with the others taken as a whole. Were this branch of bee-culture properly understood, the yield of surplus honey might be increased several hundredfold.

Dr. Blumhof says—"And in unfavorable years, he [the bee keeper] may have the mortification of seeing the bees perish with hunger, unless he considerately and seasonably makes provision for their wants." Langstroth says—"Doubtless, in these districts, where honey is so largely produced, great attention is paid to the cultivation of crops which, while in themselves profitable, afford abundant pasturage for bees."

Attentively examining the above quotations, we find the prevailing sentiment of the best apiarians is, that we must cultivate pasturage for bees, if we would make it a profitable business and do away with the "common failures" now so often to be found, extending over such a wide range of country. The best crops for bees should be cultivated, yielding both honey and pollen. And it will be good policy to cultivate those crops which would also be serviceable for grain, and pasturage or hay for stock; as that would be an important consideration for all concerned, and a great gain.

I am in, then, for improvement in the right direction.

JEWELL DAVIS.

CHARLESTON, ILLS.

As a general rule, place your hives where they will be least exposed to the wind, and where, though shaded, they will enjoy as much of the influence of the sun as possible.

[For the American Bee Journal.]

Bee Pasturage.

ALSIKE AND MELILOT.

The attention of bee-keepers is being directed to the cultivation of honey producing plants, to enable bees to store a winter's supply in extremely poor seasons, and add largely to their stores in more favorable ones. Among the plants recommended are the Alsike and Melilot clovers. I have but little experience in the cultivation of either of these plants, and shall not say much in relation to them. My object in writing is more for the purpose of giving credit where credit is due in the sale of seed. Last spring I sowed four acres to Alsike clover. I was determined to get the genuine article, if it was to be obtained, and purchased seed of five different parties. By far the cheapest and (perhaps with one exception) the best and cleanest—that is, the most free seeds that are foreign to it, such as timothy, red and white clover, &c.—that I purchased, was procured from Mr. H. M. Thomas, of Brooklin, Ontario, Canada West. Mr. Thomas was prompt too in filling orders, and the seed was put up in stout linen bags, and received in good condition; while some of that sent by other parties was put up in paper packages, which had broken open and part of the seed sown along "Uncle Sam's" mail route, where by me at least it was not wanted; and where, if it germinates and my bees are to work on the blossoms, they will be obliged to fly farther than even the Italians were ever yet known to do.

In the summer of 1867, I procured a small package of Melilot clover seed of Mr. Baldridge. I found the plant to be identical with one growing here and called by some Dutch clover, by others sweet clover.

From what has been published in relation to these plants, I must say that so far I have been somewhat disappointed in them both. The Alsike has exceeded my expectations. The seed was sown late, four pounds to the acre, on sandy soil (where it is represented as not doing well) in wheat, and dragged in. Notwithstanding the dryness of the season, and the fact that the wheat would retard its growth, it has been in been in blossom so that my bees have worked on it, and it is now quite as large as red clover sown at the same time in adjoining fields. It promises now, with me, to be equal if not superior to red clover for hay and pasture; and it will without doubt prove valuable for bees. The Melilot clover commenced blossoming early in July, and continued in bloom until September. But few bees could be found on it at any time, with the exception of about two weeks after a rain, during which time it was literally *alive* with them. I have never seen one-tenth part of the number at work on the same surface, on any other honey-producing plant. It was quite as much affected, however, by the drought as the white clover, buckwheat, and other flowers; and, during the dry weather, but little honey was collected from it.

J. A. TOWNLEY.

TOMPKINS, MICH.

[For the American Bee Journal.]

Wintering Bees.

MR. EDITOR:—I have been much gratified to see and read, in your valuable JOURNAL, that the *manner* of *wintering* bees, has, during the past year, been attracting more than usual attention. That this is so, however, seems quite natural, since it is now an admitted fact amongst all, or nearly all, practical apiarians, that some eight-tenths of all the colonies of bees that are lost, are lost during the winter and early spring months.

It may be an interesting subject of inquiry, to some writers, to attempt to account on scientific principles, and intelligently, for the loss and for the *cause* and *reason* of the loss of this or of that colony of bees. But, in a practical sense, what does it amount to, so far as a very large majority of bee-keepers of this or any other country are concerned, to learn through the columns of your valuable JOURNAL, or from any other source, what causes the loss of this or the other colony of bees, after they are lost, unless the *means* and *manner* of saving and protecting such as may survive is also learned?

It certainly is of no practical value to any bee-keeper to learn or be informed that this colony died by reason of being robbed, or that the other colony was frozen to death. Nor is it of any benefit to him to learn that this or that colony died for want of stores or ventilation, or because of too much ventilation, or of dysentery, or because of anything else being wrong—unless he also learns from the lesson before him, or by some other means, how to prevent the loss of other colonies by like causes in future.

It may be said, and it has been said by some, that ordinarily it is not safe to attempt to winter a colony of bees having less than from sixteen to twenty pounds of stores to commence with. Others have said that thirty or forty pounds are absolutely required. Some writers claim that the best place, all things considered, to winter bees, is upon their summer stands, and that all attempts to protect the hives in which the bees are kept from the storms and cold winds of winter, are entirely useless, if not absolutely injurious. It will not be denied that a strong colony of bees, with plenty of stores, will pass the winter safely, and to all outward appearance very well, on their summer stands, unprotected. But, would not this same colony have passed the winter better, with many more bees and several pounds of honey saved, with proper protection from the storms and cold winds of winter?

I will admit that in a climate where the thermometer never sinks below the freezing point, and which is not subject to sudden changes of weather, from quite warm to cold, that protection to bees in the winter season, may be and probably is untirely useless. I will also admit that, in climates where for days and weeks in succession, the thermometer will range from zero to 10°, 20°, or 30° below zero, burying bees under ground, in special repositories made for the purpose, or depositing them in caves and other places under ground, may be, and in many cases is, necessary for their protection during the winter season.

And here, in eastern Ohio, in latitude about 40½°, unless in a very favorable location, I am fully satisfied (after an experience of several years in practical and experimental bee-keeping on a small scale,) that some kind of protection during the winter and the early spring season, is very beneficial to bees, when kept in hives made of inch boards, of one thickness. I have experimented in this location, in wintering both strong and medium colonies of bees on their summer stands without any protection; and also with the hives as well protected as the circumstances and their position would admit of. I have at the same time wintered like strong and medium colonies in a special repository, built for the purpose, entirely above ground. The results of such experiments have been uniform, as a general thing—a few exceptions only—that colonies which were proteced on their summer stands, wintered better than the unprotected ones; and that such as were wintered in the special repository wintered the best of any. The advantages in favor of the special repository and the results thereof, have been threefold. *First*, in the saving of from five to fifteen pounds of stores per colony, each winter; *second*, as a result, the saving, in good condition, of several medium colonies that were somewhat scarce of stores and bees in the fall; and, *third*, in having colonies both stronger in bees, and with an extra amount of surplus stores in early spring, and consequently earlier and better swarms.

The special respository spoken of, is a plain and cheap structure, and built entirely above ground. It is nothing more than a plain wooden building, eight feet wide, fifteen feet long, and seven feet high, weather-boarded and lined closely with inch boards, with a double floor, and a common lap shingle roof. It has a door at one end, and is built without any filling in between the flooring or the weather-boarding or lining. In a word, it is a plain out-building made double below, and on all sides, with a single common lap shingle roof upon it. It is such a building as has answered the purpose very well here; but it is such a building as might, and probably would, be too close and warm in a mild and warm climate, or too open and cold in a very cold one.

In this repository I pack away bee hives in plenty of dry straw, about the first of December. Before doing this, however, I prepare them as follows: Contract the front entrances to about three-sixteenths of an inch of the entire width of the hive, and open the holes in the honey-board. Raise the corner or top of the hive slightly—say ⅛ of an inch. With this preparation, and in this out-house, I have packed away colonies of bees for several winters past, and wintered them with success. In packing them into this repository, I have always been careful to set the hives far enough away from the ends and sides of the house to admit considerable dry straw to be packed in the spaces there left. In short, I have always made free use of dry straw, packing it beneath, around,

between, and above the hive; and have yet to learn that I have ever used two much dry straw for this purpose. Let the straw thus used be thoroughly dry, and then use it freely.

In this repository, and in *this manner*, I have successfully wintered several colonies of bees, which had not over eight or ten pounds of stores on hand when deposited therein about the first of December. Such colonies, however, generally need feeding a few days after being set out on their summer stands in the spring; and, with care, often prove to be the most profitable colonies in an apiary.

After repeated and successful experiments on wintering bees in *this manner*, on the 3d of December last, I stowed into this special repository twenty-three colonies of bees, giving the weaker colonies central portions therein. So far, they have remained quiet, making little noise either in very cold or in moderate weather.

This manner of wintering bees is not a new discovery with me. I got the idea when quite a boy from the following incident. It was when it was yet common for farmers who kept bees to condemn all weak colonies, that had not accumulated what was supposed to be an abundance of stores, in the fall season, to the brimstone pit. The writer, when a boy, became the owner of a late swarm, in consideration of hiving it in hay-making time. It was placed on its summer stand, with several other colonies, in the family garden. In the fall, as was then the custom, all the hives were carefully examined and lifted up to ascertain their respective weights. Such as were condemned, being marked, a day was set apart for the slaughter. About the first of the next April, this colony was found in an old-fashioned *gum*, in which grain had formerly been kept, in the barn. Around the hive and in the gum there was found considerable straw, which had the appearance of having been pretty well tramped in, rendering it necessary to literally dig out the bee hive. On bringing it to light the bees were found to be alive, and ready to resist any supposed unjustifiable interference. The result was that the colony was replaced on the summer stand, and did well during the following summer.

I may give you the result of the experiment now being tested, sometime in April next.

BELMONT.

JANUARY 30, 1869.

[For the American Bee Journal.]

Borage.

Who has borage seed for sale? And who will sell it the cheapest?

I see no advertisements this winter, and have lost those I had, the binder having thrown aside the covers when he bound the last two volumes of the JOURNAL for me.

By the way, the two volumes of the AMERICAN BEE JOURNAL make a very neat book. I would not take ten dollars for volumes 2 and 3, if I could not replace them.

QUERIST.

[For the American Bee Journal.]

Several Items from Novice.

MR. EDITOR:—Querist, on page 148, thinks we may be mistaken in thinking that the rye-flour in some way saved the honey, and asks us to give our *revised* views, after hearing his reasons why it could not be so.

Nearly all that we have written for the BEE JOURNAL have been *facts from actual experience*, not theories. In the above case we had a number of hives nearly destitute of sealed honey, *as we opened them daily* TO SEE, and had made preparations to feed them. But after they "went in" for the rye flour, they scarcely used their honey at all, even though breeding was very much increased; and we did not feed them at all, for they did not require any. Does not this look as though the meal answered in place of honey, as others who have tried the same experiment have observed before?

We do not think they use honey for packing the meal, unless largely diluted with water at least; and did not suppose they used anything, until a writer in the BEE JOURNAL suggested it; and cannot discover that they do now, although we have studied the operation considerably.

Mr. Editor, will you please tender our thanks to Mr. Gallup, for, listen, our two-story "brag hive" has been getting very uneasy of late, since the warm weather began; and the very evening after receiving the BEE JOURNAL containing his article on "Wintering," our "better half" remarked that *they* had a way of coming out when a light was carried near; and were buzzing in front considerably, though the honey-board was off entirely. But, as the cap was pretty tight, we commenced raising it up, and discovered that when it was clear off, they went in and behaved themselves like the rest. Mr. Gallup gave us our first clear ideas on the subject of ventilation.

Our small experimental swarm, last winter, that consumed so little, we happened to get just right; but this winter has been so much warmer, so far, that some of our bees are rather restless with all the ventilation the *American Hive can give them*—another thing in favor of the *Langstroth*.

Does any one succeed in inducing bees to use meal inside of their hives? We never have succeeded, even when *wet up with honey*; and yet those having *patent feeders* tell us about it.

When we first started to feed meal in the spring, we used honey and water; but after they got "a going" we doubt if they would notice it at all. We are getting in our meal now.

Mr. Editor, hurrah for 1869, says

NOVICE.

It is certain that 16,000 bees in one hive will collect more honey and wax, than the same number lodged in two different hives could possibly do.

In handling bees gentleness and boldness are, at all times, equally necessary.

[For the American Bee Journal.]

The Wenham Bee Muss.

MR. EDITOR:—I judge by what I have seen in the JOURNAL that you do not know that the vote to banish bees from the town of Wenham was reconsidered at an adjourned meeting, held only three weeks later than the annual town meeting. But such is the fact; and we have now no law upon the town records banishing bees from our bounds.

Now, while I am upon this topic, I may as well give your readers a little history of this bee question. I very much doubt whether four persons can be found in the town of Wenham, who believe that bees do injure the fruit by taking the honey from the blossoms. But the fact is (or *was*) that Mr. Gould had, by good management that season, made his bees pay him a very handsome income; and it was well-known throughout the town and county that Mr. G. had realized somewhat over *six hundred dollars* ($600) from fifty-two hives of bees, besides an increase of more than thirty new swarms.

Well, the fruit-growers, (of whom we have a few) got the idea into their heads that all of this six hundred dollars was just so much money out of their pockets And they determined to stop this kind of "thieving," as they chose to call it, at any cost. For this purpose some of them set themselves at work, and thus lawyers, professors, and scientific men generally were consulted as to the best plan of getting rid of the bees, and proving them to be a nuisance.

But the trouble was, they found it difficult to discover anybody who knew more about bees than themselves, that would state that the bees did any injury to fruit by taking honey from the blossoms. They then even went so far as to visit some of the members of the Legislature, to see whether they could not procure the enactment of a law declaring bees a nuisance throughout the State. In this quarter, too, they met with no success or encouragement. They were generally laughed at, in some cases called fools, and coolly advised to go home. This, however, did not not check them in the least. They were determined to punish Mr. Gould, if any mode of doing it could be devised. So when the town meeting came, they made out to muster thirty, of the two hundred voters in the town, to vote that bees were a nuisance. Well, the adjourned meeting came, and the result was as above stated.

Mr. Gould removed his bees and family from Wenham, early in the spring of 1868, several weeks before the trees blossomed, and when they did blossom very few bees could be seen on them, as not over twenty hives of bees were left in the town after Mr. Gould's removal. As a consequence, our fruit-growers expected a *very* large crop of all kinds of fruit; but in this they were disappointed. All our fruit trees blossomed profusely, and apple and cherry tree never looked better and more promising; yet I venture to say that there never was so little fruit raised in Wenham as in the year 1868.

Now, Mr. Editor, to make a long story short, this bee and fruit question was all a humbug; and was got up to injure Mr. Gould, because some of the "good (?) people of Wenham" supposed Mr. G. was making too much money out of it.

One reason why they found fault was this, that Mr. G. had only one acre of land to feed his bees upon. Now Mr. G. raised more fruit, with the exception of apples, than nearly all the rest of the fruit-growers; and all of this from the one acre of land. The season before they got up this "bee muss" Mr. G. was obliged to gather one half of his fruit before it was fairly ripe, to keep his trees from breaking down. Four barrels of Bartlett pears alone were thus gathered. Mr. Gould had most of his bees in the garden, among his trees. So you see, Mr. Editor, Mr. Gould not only got the honey but the fruit also.

I am inclined to think that we Wenham bee-keepers are not likely to be troubled again by the fruit-growers. I have not heard the thing mentioned since the trees blossomed last spring. Had there been a good crop of fruit raised in Wenham last season we should, of course not have heard the last of it very soon.

One man who has kept bees for fifty years, and lost them only the year before, made this speech in town meeting: "He said that he had seen the bees sucking the honey out of his manure heap, and did not believe his manure was so good for this reason. But he was willing that bees should be kept in town, if they were only fenced in so that they could not get out." Another man said that the bees made his fruit sour and wormy.

We bee-keepers had about made up our minds that the bees would be held responsible for the potato rot—a disease which troubles New England farmers very much.

I am sorry that we did not have a reporter at the town meeting to report all that was said and brought up against the bees. Frank Leslie's "*Budget of Fun*" would not begin to compare with it.

H. ALLEY.

WENHAM, MASS.

[For the American Bee Journal.]

The Bee Plants.

I intended to state, long ago, that I found the *Cleome integrifolia* I procured from Mr. Terry, identical with the *Polinisia purpurea* which I had previously raised.

I think it will hardly pay to cultivate it so far north as this, because the weather after the first of August is so variable that flowers often fail to secrete honey.

I have never had much box honey stored after the 10th of August, excepting one year, 1867.

But as bees work on this plant freely all day and for five or six weeks, I should think it might do well further south.

J. L. HUBBARD.

WALPOLE, N. H.

[For the American Bee Journal].

Several Things Considered.

Much has been said by different individuals, in various parts of the United States, about obtaining almost incredible amounts of surplus honey and enormous increase of bees. Now I wish to know much how those bee-keepers feed in the spring and summer in order to secure such gigantic results. I wish to know how many swarms they put in a hive, and how many times in a week the swarm is replenished with brood from other hives. I do not mean to charge my good brethren in bee-keeping with making false statements, for I believe that they get all the honey and swarms they have reported. But I am led to the belief that all that has been done to obtain such desirable results has not been made public, or else I am forced to the conclusion that they live in a far better locality for bees than the State of Iowa is; for I confess that I have never been able to secure any extraordinary product in the common way, that is, without resorting to the means already intimated.

Here, in the west, we commonly have cold, blustering, and wet springs. Consequently the bees lose the advantage of the first bloom, or at least a large part of it; and then the white clover does not fairly come in till the middle of June. The lindens, too, vary greatly in their period of blooming. In some seasons, in the uplands, they bloom as early as the 25th of June, or a week later in the flat lands; whereas, in other seasons, they do not bloom till the middle or latter part of July. Most of the native bees build no comb after the linden bloom closes; though the Italians, both pure and hybrids, still store some surplus. Of course there are some stocks in the spring that did not get through the winter with a sufficiency of population and stores. Few of these secure any surplus, and I shall not here speak of their condition, my object at present being to find out, if possible, what is requisite for the attainment of such eminent success as that referred to above.

I am pleased with Elisha Gallup's article in the December number of the JOURNAL, page 111, on bee management. It is to the point, as far as it goes. I would like to have Mr. Gallup, or some one else, give us a full description of the honey extractor, as to its practical working, as there is none in this section of the State that I could examine. I believe it to be a good thing. I have often felt the need of something of the kind, even before I heard of the thing itself. I often wished that the honey could be got out of the combs without destroying them. Now, as the discovery has been made, and I have the geering to run the thing, I would like to make one, if it do not cost too much. I would also wish that Mr. Langstroth would tell the people through the JOURNAL, what he charges those that use his hive; also the price he charges for individual rights. I suppose any one has a right to make and use it, and the firm has a right to collect their price for it.

As the last season was an awful poor one for bees to store a sufficient amount of the precious nectar, to keep from starvation the swarms made during the time the lindens were in bloom, there will have to be considerable feeding done the ensuing spring. I have tried various kinds of feeders, and as all of them failed to answer the end designed. I concluded to have one made entirely different from any recommended; and as I am the inventor of it, I have undoubtedly the right to brag of it just as much as I please. However I will merely say that I have one that knocks all other feeders in the shade. You will see a full description of it in the BEE JOURNAL, under the inventor's own signature I can testify to its practical merit, and if others of my good fellow bee-keepers continue to recommend their strainers, I may be allowed to boast more of the feeder.

JAMES MCMULLEN.

OSKALOOSA, IOWA.

[For the American Bee Journal.]

A New and Curious Theory.

I guess it may be called Coxe's, as he is the only advocate of it I know of. It is this: That bees furnish the necessary germ, and requisite heat, to cause combs to grow similar to mushrooms.

If the case is stated right, I would like to know—

First. If all the wax, except some propolis used at times to strengthen the comb in special places, is not an outgrowth of the body of the bee, in thin scales of the thickness of the sides of the cells?

Second. What is done with the scales of wax, as the bees keep producing them, after the hive is full of cells, provided there is honey to be gathered, or they are raising young bees?

Third. Why cannot Mr. Thompson produce the necessary growth in his forcing house, as he has embryo comb in all stages, in all temperatures between forty-five and one hundred degrees, and yet no growth?

Fourth. Must the comb germs have the emanations of the bodies of bees, in the shape of thin scales of wax, to apply to the outer edge, or sides, or bottom? I understand the theory assumes bottom growth that pushes the rim outwards.

Fifth. Is the base or the rim of the cells the germ?

Sixth. Do not the combs cease to grow, when honey cannot be obtained in sufficient quantity to have some to store, notwithstanding the necessary temperature is kept up by the cluster of bees?

J. M. MARVIN.

ST. CHARLES, ILLS.

The *sting of a bee* is a beautiful little tube, formed like a telescope, through which the poison from the bag to which it is attached is injected. This very fine and delicate apparatus is barbed at the end, and when firmly fixed below by contraction, draws the rest of the sheath after it; and the sting, with its appurtenances, is so large in proportion to the whole body of the bee, and the detaching it from the other parts so seriously disturbs the internal economy of the insect, that the wonder seems to be that it retains any animation at all after losing it.

[For the American Bee Journal.]

Various Things.

One great want here, in northern Illinois, is *protection*—summer and winter. I have made a hive of Mr. Langstroth's common form—18⅛ x 14 ⅛ x 10 inches deep in the clear, inside dimensions. This hive is double. The inner is half an inch in thickness, and the outer seven-eighths, separated by quarter inch cleats, so as to make air space ends, sides, and bottom. The top I have fixed for wintering as Mr. Langstroth proposed in the October number of the BEE JOURNAL, except that I prefer a board nailed on to the strips across the tops of the frames, instead of carpeting, &c., before adding the protection in the top of the hives.

I made the entrance of the hive as Mr. L. says, except that it is only nine inches long centrally, which I think is long enough for hiving and ventilation in summer, and affords better protection in winter. Against this passage I put, in winter, a piece of board which closes it, except that an opening is made centrally, 1½ inch by ⅜. The floors of outer and inner hive are matched, and the hive painted outside and inside with two coats.

I like this hive very much, and intend to make a good many like it, or similar, for the coming season; and what I want to ask is—

1st. Will it pay to expend this much on them for one's own use?

2d. How may it be improved? Is ¼ inch sufficient air space between the outer and inner hives? Is ten inches depth, in the clear, sufficient in this cold northern climate?

Now, Mr. Editor, you can put the above in the JOURNAL or not, as you think best, but I would like to know through the JOURNAL, or otherwise, the proper answers to the above questions.

On the sticks across the frames, I said I prefer a board (some ½ inch thick) to carpet, &c. I do for two reasons—first, it makes a more perfect chamber; and, secondly, it gives less draft through the bees. I fear Mr. Langstroth's method of wintering is too *open*. My experiments on this point for nearly twenty years show that a very small entrance below, and a little circulation through the bees, are sufficient to keep the bees dry and healthy. The objections to so much openness are, first, the bees eat more; secondly, they breed less, and thirdly, they feel the changes of the weather more.

In one instance I cut a hole, 5 by 5 inches, and put glass over. In rolling up their clothing I learn their habits under various circumstances. They ordinarily *fill* the shoal chamber, hanging on the board, but not on the glass—thus making a hollow square almost to the depth of the chamber.

In another instance, I have, instead of board, *slats* far enough apart to put honey comb or candy between them. Over the form I put glass. The object is, first, to use it as a feeder; secondly, to discover the habits of the bees. They *fill* this chamber, and hang on the slats like a swarm in summer. When I close the front entrance for a few hours, they are less dense. When I open the honey-box cover about half an inch and leave it so some three or four days, to dry the upper part of the clothing, the bees recede from the chamber and draw together among the combs—showing that they are sensitive to the weather, though I *fill* the chamber with clothes to within an inch of the top.

I have transferred a good many swarms from the common and united them in the Langstroth hive, in December. It works to a charm. There is no brood in the way, and the bees behave admirably. They make the best of stocks. In one instance I put five into one. There was an array of slaughtered queens at the entrance next morning. I put the choice worker comb, that is true and cuts to advantage, in the centre of the hive; and as much as I want to of the rest, I put outside, to be rejected or used for something else next May.

You can wing the bees to where you want them from each piece of comb as it is cut out; or drive them with the smokepipe from one hive to the other. They never quarrel under such circumstances.

In fastening the comb, I use strips ¼ inch broad by ⅛ inch thick, and a little more than the width of the comb-frames in length, and fasten by tying the ends together.

LEVI WHEATON.

POPLAR GROVE, (ILLS.) Jan. 1, 1869.

[For the American Bee Journal.]

Bee Hives.

MR. EDITOR:—I am much pleased with the JOURNAL since I have become a subscriber to it. I have several works on bees, but still see something new in every number of the JOURNAL. And as it seems to be a sheet of free specch, I send you a few lines for publication.

In the first place I agree with Mr. Davis in desiring diagrams and explanations of all hives. I will send you mine with full descriptions, as soon as I receive my cut.

On wintering bees there seem to be a great many different opinions. I think some of the writers, in the way they propose for wintering, require a great deal of work. As simple a plan as any I have seen (and no doubt a good one) is Mr. A.'s, on page 108 of the December number. My own plan, I think, is fully as simple. I have my summer stands with good roofs on, to shade my hives in summer. When winter comes, I board it down to the ground, except the front, a part of which is open. I do nothing to the hives, only when the weather gets frosty I open the ventilation, to keep the bees from sweating, which it does like a charm.

I have wintered bees for three years with success, not losing a swarm; and all my friends that are using my hive, winter in the same way, and I am safe to say with the same success.

There will be a great many of my hives in use the coming season. I have both the movable and stationary comb. Patented February 25, 1868, No. 74,810. I receive just as much benefit from the stationary comb bar, as the movable frame, and with as little trouble.

ALPHA, OHIO, Dec. 2, 1868. B.

[For the American Bee Journal.]

Mr. Kidder's Reply.

MR. EDITOR:—I have noticed in the last three or four numbers of the BEE JOURNAL, that there has been considerable said at my expense in reference to bee hives and queen bees.

With your permission, I will correct a misstatement that appeared in the December and January numbers, by our knowing friend, E. Gallup.

On page 107, of the December number, Mr. Gallup complains that the West has been humbugged by Kidder and others, in sending out queens for pure Italians that had but one stripe. As long as I have been in the business of raising Italian queens, which is near eight years, I don't know as I have ever reared one of the description he speaks of having one stripe. The purity of Italian workers may be known by stripes upon their bodies; but I was not aware that the purity of queens was so determined.

Out of the hundreds of queens that I have sent off by mail and express the past seven years, there has been but very little complaint, but what they were all right in regard to purity and their color light, approaching near if not quite to a gold color. And, aside from this, we have given our customers a warranty that the majority of workers from said queens shall have three distinct bands or stripes, and when such was not the case, we have furnished them with others free of charge. I have no recollection of supplying Mr. Gallup with queens, and I doubt very much that he ever saw a queen that was sent by me to any one else; and yet he seems to know all about them. I have received many complimentary letters from different purchasers, that our queens were superior to those furnished by Mr. Langstroth and Mr. Quinby.

In regard to my bee-hive, referred to by Mr. G., I will state that, in the suit he speaks of, there was no trial whatever. The young man Langstroth, has asserted on page 135 in the January number, what his father asserted several times before, that the suit in question was brought to a final hearing upon proofs and pleadings, &c. This I pronounce *utterly false.* For the benefit of the numerous bee-keepers, I will here state the facts of the case. There never has been, at any time or place, a judgment rendered against my hive, as an infringment, upon proofs and pleadings. In fact there never has been a contested suit in any court in the United States where my hive was pronounced *an infringement* on the so-called *Langstroth hive,* upon proofs and pleadings. The decision of the court at Utica, referred to by Mr. G. and Mr. L., as I said before, there was no trial. They took judgment by *default* and not upon testimony. And, furthermore, the expense of the court was paid by the plaintiff and not by the defendant. In this case against Charles Austin, the plaintiff or his counsel was never ready for a trial, unless it was at the time Mr. Austin did not appear; and after being baffled several times, the defendant deemed it advisable to pay no more regard to it, as it was not a suit for damages, and if they took judgment by default, it amounted to but little, as long as there was no regular trial. Mr. R. C. Otis, an agent for Mr. Langstroth, commenced proceedings against four other patentees, and myself amongst the number, for infringement on the Langstroth patent. All of these suits were withdrawn by Mr. Otis, and all costs paid by him, as I am informed. I know he paid all costs in the suit against me, and withdrew it.

I would further inform these knowing parties that the hive in question at that time, is not the kind of hive that I now use or sell, as the point at issue at that time was the particular manner in which the frames are arranged inside the hive. It was not upon the frame itself, nor was it upon any other part of the hive. I will also state that I now use a frame of a different construction, and its arrangement in the hive is altogether different from the one Mr. Austin had in his possession in 1863, and does not interfere at all with Mr. Langstroth's patent, nor any other man's patent.

K. P. KIDDER.

BURLINGTON, VT., Feb. 11, 1869.

[For the American Bee Journal.]

Aphis Honey.

MR. EDITOR:—I will give you my views of what some call honey dew; and its effects on bees. First, its history.

I have been acquainted with a dark-colored substance which the bees gather in the fall of the year, once in six years. It is gathered in the woods in August and September, some years in very large quantity in this section of the country. Its origin is from an insect that lives on the Beech trees, and perhaps on some other trees. It was quite plenty last fall, but the heavy rains in September prevented the bees from gathering as much as they would if the weather had been more favorable; though, as it was, they stored some in the boxes.

ITS EFFECT ON THE BEES.

It does not appear to hurt them while the weather is mild; but the first cold spell in December generally brings on dysentery, which proves fatal to a great many colonies, and reduces others very much. Those that die usually leave an abundance of honey—sufficient to have wintered them, if it had been of good quality.

WHY DOES IT KILL THE BEES?

I will give you my theory. It is this. As this substance is not a vegetable product, I think there is no sugar in it, and hence is no proper food for bees. It has always proved injurious to them, ever since I first became acquainted with it, which is more than thirty years.

THE REMEDY.

Empty the honey as fast as it is gathered with a honey-emptying machine, and feed your bees with clover honey.

If any of your readers have had an opportunity to observe the periods of this insect honey, and the length of time between the periods, I

should be glad to know what their observations are on the subject. Honey dew is not the right name for the substance which I have tried to describe. I always see dew as clear as distilled water, and should *just as soon expect to find a salt dew as a honey dew.*

REMEDY FOR BEE-STINGS.

I have found the following to be the best remedy that I have ever tried. First, extract the sting; then wash the part with cold water, rubbing it well for half a minute; then rub with a dry towel for half a minute more, then apply about one-fourth of a teaspoonful of spirits of camphor, and rub for another half minute.

MORRIS SMITH.

NEW SALEM, OHIO.

[For the American Bee Journal.]

In a private letter received from Mr. J. H. Thomas, he says—"I am much pleased with the BEE JOURNAL. Would not do without it for three times its cost. I feel inclined to withdraw my correspondence from other papers, and write more for the JOURNAL, &c., &c." "My sentiments exactly." *Good.* Don't let that inclination die out. We all ought to feel a pride in our own institutions, and if all of our old bee-keepers of large practical experience will contribute something of their views and experience to the columns of the JOURNAL it will become still more interesting. Now, what shall we do to bring out Mr. Quinby, Mr. Langstroth, Mr. Baldridge, Mr. Marvin, Mr. Alley, Mr. Cary, Mrs. Tupper, and a host of others? Here, gentlemen and ladies, I will give you a very polite invitation to contribute some of your experience in bee-keeping for the BEE JOURNAL; and if you do not accept the invitation, I do not know but I shall send Gallup after you with a sharp stick, to challenge you to open an ink fight on the bee question. I will freely give up my space in the JOURNAL to more experienced pens.

E. GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.]

Red Clover and Italian Bees.

Numerous articles have already been written on the subject—some writers contending that Italian bees gather honey plentifully from this plant, and others maintaining the contrary. Possibly I may be able to submit some observations that will conduce to an elucidation of this seeming puzzle.

Red clover belongs to an order of plants yielding honey only in peculiarly favorable states of weather. Even the other clovers do not at all times secrete honey when in bloom. Hence when the largest fields of red clover are in blossom, but the blossoms do not secrete honey, it is of course impossible for the bees to gather any therefrom. But whenever the weather is favorable to the secretion of honey, and the nectaries of the blossom are filled therewith, these will be visited by the bees—not indeed by the Italians alone, but by the black bees also, though the latter will be the smaller number. On the other hand, when honey is not secreted in the blossoms, we shall not only see no bees upon them, but also no humble bees, no butterflies or other other honey-loving insects. Last spring the white clover in this neighborhood was not visited by bees before the 20th of June, simply because till then the blossoms contained no nectar. The same was found to be the case with Swedish clover, in several places last summer.

I will also notice a striking instance of Italian *versus* black bees. Last summer I had a field of late buckwheat close to my apiary, which yielded honey plentifully for some time. Though I had then only a few stocks of black bees remaining, the great majority of the bees visiting the buckwheat were blacks—the Italians finding at that time ample and more acceptable pasturage elsewhere, though at a greater distance. Whether this was red clover or some other blooming plant, I am unable to say; but know that they very speedily refilled the emptied combs returned to them. Buckwheat, too, belongs to an order of plants, yielding honey plentifully only at favorable times and on favorable soils—furnishing as far as I am aware, the largest supplies only on sandy soils. The only blossom which here yields honey on every kind of soil and season, is that of the Linden tree, though the quantity varies in different years.

In conclusion, I remark that our bees are wintering well here, being apparently healthy, and gratifying expectations of good results next summer. Hitherto the weather has been mild and fine.

W. WOLF.

JEFFERSON, WIS., Feb. 1.

[For the American Bee Journal.]

Extraordinary Swarming.

MR. EDITOR:—Please oblige a subscriber by inserting in the JOURNAL the following account of natural swarming that surpasses anything I have heard of in this country.

Last spring I had a hive of black bees, which produced an increase of fifteen swarms in the following way. The old stock swarmed May 4th, 10th, 18th, and 20th. These swarms were put in hives full of comb. The first or prime one sent off four swarms in May and June. These were hived and did well. The one that came off May 10th swarmed twice in June; the one that came off May 18th sent out two swarms; the one of May 20th one swarm. The old stock again swarmed twice in August, and gave me fifty pounds of honey. Twelve of these swarms stored honey enough to winter.

GEORGE STRICKLAND.

DAYTON, N. Y.

Unless they are hurt, provoked, or affronted, bees seldom make use of their stings.

THE AMERICAN BEE JOURNAL.

WASHINGTON, APRIL, 1869.

☞ The American Bee Journal is now published monthly, in the City of Washington, (D. C.,) at $2 per annum in advance. All communications should be addressed to the Editor, at that place.

We have devoted nearly all our space, this month, to our correspondents, though without exhausting our files. A large number of articles remain on hand, which shall have early attention.

☞ We are indebted to Mr. Woodbury, of Mount Radford, (Eng.) for the account, in our last number, of the first day's proceedings of the German Bee-Masters' Convention at Darmstadt. The proper acknowledgement was inadvertently omitted in "making up."

☞ A meeting of beekeepers will be held on the 7th and 8th of April, at the Board of Trade Hall, Jackson, Michigan, to organize a Beekeepers' Association, and to discuss matters pertaining to bee-culture. A cordial invitation to attend is extended, by the Committee of Arrangements, to beekeepers from adjoining States and from Canada.

Mr. Grimm, of Jefferson, Wisconsin, sent us a box of honey, gathered from red clover, last season, by his Italian bees. It had a slight pink tinge, and a peculiar, though not unpleasant, taste and odor. There seems to be no doubt that the Italians can gather honey from the blossoms of this species of clover, as even the common bees can do so, when it is growing in poor soil in a dry season. But how abundant the yield is, in ordinary circumstances, remains to be ascertained.

We are pleased to learn that the good people of Wenham, (Mass.) refused to sustain the town meeting resolution, banishing bees from their bounds. The marvel was that, in these days, such exclusion should be thought of or attempted anywhere; but, in view of the arguments advanced in its support by some of its advocates, of which a correspondent gives us a specimen, we may cease to wonder.

☞ A chemical analysis of the jelly with which the larvæ of worker bees are fed, was made by Dr. Dönhoff, about fifteen years ago. He found its principal constituents to be albumen and fibrine, with minute portions of wax and sugar—which latter he regarded as non-essentials, and as accidentally present. He judged the jelly to be an animal secretion furnished by a gland in the gullet, as pollen is never found in the stomach of the bee. This analysis was not considered altogether satisfactory or reliable; but we are not aware that any other has since been made.

Bees' Saliva.

Bees usually moisten the pollen or meal slightly with saliva, as they gather it, to enable them to form it into pellets. The salivary glands of the workers are very largely developed, and the secretion of saliva is rapid and abundant. This saliva has been regarded as an acid, but we incline to believe that it will be found to be an alkali. In comb-building it is obviously used to render the newly-produced wax plastic, and, at the same time, it probably gives to the wax its pure white color—precisely such as results from dissolving yellow wax in a solution of pearlash.

A further fact in support of this conjecture is this, that the alkalies readily decompose grape sugar (the chief constituent of honey,) producing *formic acid*, which is identical with the *poison of the honey bee.* If the saliva is an alkali, the production of the venom is easily accounted for.

Value of Pollen or Meal.

Our correspondent, Novice, is by no means singular in the opinion that a saving of honey is some way effected, when bees are supplied with meal in the spring, as a substitute for pollen.

Dzierzon says—"Much honey is undoubtedly saved, by means of pollen, in the preparation of jelly; for we see masses of brood maturing in the spring, without finding the store of honey much reduced, when bees are fed with meal."

Of meal feeding, Mr. Bartels says, in the *Bienenzeitung*, "It is always very beneficial when there is a scarcity of pollen, whether the bees use it for their own sustenance or for the nourishment of brood. Much honey is thereby saved."

In the spring of 1857, the Baron of Berlepsch fed to his 106 colonies about 360 lbs of flour, or, on an average, 3 lbs. 7 oz. per hive, and remarks —"I am satisfied that by this feeding my stocks

not only became populous, but that an extraordinary saving of honey was thereby effected. When I commenced feeding meal, my hives contained but little honey, the year 1856 having been an extremely poor one, and I calculated on having to furnish at least 300 or 400 pounds of sugar candy to sustain the bees. But thenceforward their stores of honey decreased very slowly, and I found that only eleven pounds of candy were needed."

We have had no opportunity ourselves to investigate these matters, because our bees always procure pollen from natural sources so early in the spring as to render meal feeding unnecessary.

[For the American Bee Journal.]

That Bee Disease—Wintering Bees.

Mr. Editor;—It may be gratifying to the readers of your Journal, to hear of one place where bees are *not* dying off, or taking wing by night for parts unknown (not as they did in Kentucky, but) as they did in the Louisville *Democrat.*

The season of 1868 was by no means a favorble one for bees in this section. In fact, it appears to be admitted from all parts of the country, that the spring and summer of 1868 were remarkable for the small amount of honey secreted in the flowers. Yet in this locality (Western Pennsylvania) we were able to secure some surplus honey and a moderate increase of colonies. This is true of the Italians—the blacks not doing so well. And what I wish to say is, our bees are not dying off. About the 1st of December I put one hundred and nine Italian colonies into winter quarters (a cheap structure built for the purpose); and on the 12th and 13th of February I replaced them on their summer stands. The 13th being a very fine day, with the mercury at from 60° to 65° F., they improved the occasion for a "good airing." The weather then becoming cold, I returned them again to their winter quarters, where they can pass in comfort this cold weather—the mercury at this date (March 5) falling to 8° below zero. I have not lost a swarm, and do not expect to lose any.

I have had some experience in managing bees in this locality, and have never known a case of foulbrood, or a stock of bees to die of disease, but have known very many to die of famine.

I had the privilege of examining the bees in one locality in Indiana last October, and while I could detect no indication of disease, I found a great destitution of stores—some swarms still alive, but not an ounce of honey in their hive. The stocks and swarms were very much reduced in number, caused, I have no doubt, by necessity compelling them to forage, and flying to great distances, as well as entering many forbidden places, such as cellars, kitchens, groceries, and returning no more. Also, by going forth when the weather was too cold for them to return. I have often observed my bees, during cool and cloudy days, when the buckwheat was in blossom, become chilled and drop by thousands on the sidewalks, fences, standing corn, leaves of trees, and in fact anywhere they chanced to alight, and their return would depend altogether upon the sun shining out during the day sufficient to warm them into activity.

And now, Mr. Editor, I wish to say in conclusion that, should you ever conclude to brush off the dust of the editorial sanctum and sally forth to rusticate in the country (which you ought to do—who seconds the motion?) there is one little village nestling among the hills of Western Pennsylvania, in the beautiful valley of the Brokenstraw, on the line of the P. and E. R. R., where you may be sure of finding at least one latch-string out, around whose door the indefatigable Italians (with yellow tapering abdomens) are plying the busy wing in bringing in the nectar from hill and vale, through all the bright days of spring and summer.

Long live the American Bee Journal!

W. J. Davis.

Youngsville, Pa.

[For the American Bee Journal]

About that Bee Disease.

I concur with the editor of the Bee Journal that the disease is not likely to have been caused by the want of bee-bread. If want of bee-bread would cause it, my home apiary would have been destroyed before this time.

A careful examination of a number of colonies, a year ago last fall, disclosed the fact that my bees had not stored bee-bread of any account. The greater number of stocks had either none, or not over a few dozen cells of it. And this year all those colonies that continued breeding uninterruptedly to the end of the season, have not a particle of bee-bread. Yet they appear perfectly healthy up to this time—just as healthy as at any other season before; but they have not commenced breeding yet, while stocks in my southern apiary, with plenty of bee-bread, have brood in all stages. In the month of March, last year, none of the stocks in my home apiary had more than a hand's breadth of brood, yet remained perfectly healthy.

But I once noticed something very similar to the reported bee disease. At the beginning of the month of October, 1861, my bees appeared to be very busily at work on something, coming back heavy laden—though I did not find out from what they were gathering. On the 15th of the month, I carried those bees into my house cellar, which is a good deal warmer than my present wintering cellar. A week later I went down to examine whether they had quieted down, when, to my horror, I found the bottom of the cellar thickly strown with dead bees; and I heard and saw others continually coming out of the hive and fly off. I remarked to my wife that if the bees continued to die as fast as during the week just past, I would not have a hive left in two weeks. These bees appeared

very large, the abdomen being greatly distended and filled either with thin fæces or honey. I tasted the latter, but could not detect any strange taste in it. I had no doubt those bees had died in consequence of the use of the honey then recently gathered. This honey, however, seemed not to have lasted long, or was speedily purified by the warmth of the cellar, for a week later the bees appeared to be perfectly healthy and quiet.

From the reported behavior of the diseased bees last fall, I should judge that they had gathered some unhealthy honey, and died from the use of it. I am confirmed in this view of the case by an occurrence in the year 1862. For about two weeks, in the month of June, in that year, my bees gathered a large amount of honey from honey dews, and the hives speedily became very heavy. One day, while examining the amount of brood in a hive that previously swarmed, I discovered a few cells of foulbrood, and became greatly alarmed. I immediately examined every old stock, and finding a few foulbroody cells in each hive, I feared I should loose all of them; but this was not the case. Basswood trees commenced blooming on the 8th of July, and continued about three weeks. The bees gathered a large amount of honey from this source; and on further examination, I could find no more foulbrood. A large number of those stocks are still alive, though I took up some forty of them last fall. I wintered them in the cellar, bottom side up, and they appeared to do very well till they commenced using the honey gathered from honey dew. They then seemed to be affected with the same disease from which my bees had suffered in the fall of of 1861. They flew out continually, with the abdomen greatly enlarged, and died. Out of over sixty colonies, nine died out entirely, and of about twenty the population was so greatly reduced that it took them until June to recover. Young swarms that came out while the basswood was in blossom were not at all affected by the disease, remaining perfectly healthy. I am entirely satisfied that honey collected from honey dew was, at least in this instance, the cause of all the evil.

Now, while I think I have discovered the cause of the disease with my bees, I have so far used no remedy. But should they again gather much honey from honey dew, I will drive or transfer every swarm into an empty hive at the time the basswood blossoms come in.

Can Bees be Poisoned?

Some of my German bee books state that it can be done, and they state too *how* it can be done; but I would not recommend the *how*, lest some mischievous beekeeper should take it in his head to destroy his neighbor's bees, when his own are being robbed. But I know something that, if fed to bees, would make them foulbroody in three weeks' time. Yet I would not for any price communicate how it can be done; and sincerely hope that others who may know the secret will not disclose it.

A. Grimm.

Jefferson, Wis.

[For the American Bee Journal.]

Markings, and a Query.

Mr. Editor;—My bees are flying out to day as in the spring of the year. We have had a warm winter so far, and our bees have not been prevented from flying longer than a week at a time, and rarely more than three days.

Sometime ago I received from the author "*Kretchmers' Beekeepers' Guide Book*, which, although devoted to the interest of the Champion hive, contains a great deal of valuable information for beekeepers. His description of the Italian bee is the best that I have seen. On page 109, he says:—"The worker bees, if produced by a pure queen fertilized by a pure Italian drone, have the upper half of three abdominal rings of a bright yellow color, *the segment joining the abdomen to the thorax being the first.* When young, the body is covered with a delicate coat of hair, giving the entire body a light appearance; when older, this hair begins to wear off and the bee attains a glossy black appearance. * * * When filled with honey, or extremely distended from other causes, some workers occasionally show even a part of their fourth abdominal ring slightly marked." This description exactly suits my Italian bees, the queen of which I purchased from Mr. Langstroth last summer, and was assured by him that she is pure and purely fertilized.

All our bee authors tell us in transferring brood or queen cells from one hive to another, not to expose them *too* long to the sun or air, for fear they would be killed. But none of them tell us how long it will take to kill eggs or larvæ thus exposed. Do you not suppose that in a majority of cases where transferred queen cells are destroyed by the bees, it is because the inmates have already perished from exposure?

With an earnest prayer for the success of the Journal, and any amount of sunshine for our dear little friends the bees, I am truly yours,

J. W. Cole.

Andrew Chapel, Tenn., Jan. 4, 1869.

[For the American Bee Journal.]

King Birds and Bees.

Mr. Editor:—I saw in the Bee Journal an article relating to king birds. Now, sir, I have seen the king bird catch worker bees, while these were gathering honey from white clover. I have seen them dart down and catch bees when they were on the blossom of the white clover. I also saw them catch bees last spring, before any drones had made their appearance. I shot one, and found worker bees in his gizzard, and I will shoot all the king birds that I see around my apiary.

There is another bird, smaller than the king bird, that destroys a good many bees.

Whoever does not believe let him go in the vicinity of white clover in blossom, where king birds are found, and he will witness the same facts as I have done.

R. Miller.

Rochelle, Ills.

[For the American Bee Journal.]

Corrections and Explanations.

In my description of the honey-emptying machine, on page 144, are some small errors which I wish to correct.

In "bill of stock," No. 3, should be *four* pieces instead of *three* pieces. No. 11, should be $7\frac{1}{2} \times 1\frac{1}{4} \times \frac{3}{4}$.

In the ninth paragraph, last sentence, insert "have a" between should and hole.

In the last sentence of paragraph 16, read *ears* instead of *ends*. These are made of strips of tin one inch wide, with double edges, looped and soldered to the outside and inside of the can. They project $\frac{3}{8}$ of an inch above the top of the piece 10, and small wooden pins extending through these hold this immovably.

In the diagram substitute 6 in place of 5, just above the smaller screen.

I have found no difficulty in making the combs stay in place; but, if necessary, a small wooden pin would be found amply sufficient. It could be inserted in one of the posts.

J. L. HUBBARD.

WALPOLE, N. H.

[For the American Bee Journal.]

Use of Camphor to Stop Robbing.

On account of the great number of stocks I kept in one cellar, I was compelled, on wintering them out, to remove only a portion of them in one day, to prevent the bees from mixing up too much. Those taken out first were consequently prepared to go to work when those last removed were brought out, and they attempted to rob the latter. When this was discovered, they had already got a good start on some of the stocks; and I was puzzled how to arrest the robbery. At this time I had purchased a small parcel of camphor for some other purpose, and it struck me that I might stir up the sluggish and inactive stocks which suffered themselves to be robbed without resistance, by inserting a small piece of camphor in the entrance of their hives. I immediately did so, and was not a little pleased to find that the effect was to frighten the robbers, and to arouse the inmates of the hive to vigorous resistance till they drove off every strange bee.

A week later, when I wintered out the bees of my northern apiary, (all of which were taken out in one day), one weak colony was violently attacked by robbers. I pushed a piece of camphor through the entrance, and had the pleasure of seeing the same result. Attempts at robbery had entirely ceased next day, although this colony proved to be queenless on examination about three weeks later.

I trust this hint may be of service to some of the readers of the BEE JOURNAL.

A. GRIMM.

JEFFERSON, WIS.

[For the American Bee Journal.]

Ventilating the Langstroth Hive.

The movable comb hives which I got up after the Langstroth model, have no ventilating apparatus in the rear; but I ventilate those hives more effectually than they could be by the Langstroth ventilator.

The caps or cover boxes of my hives are half an inch longer than would be necessary to cover the hives; and consequently allow the honey-board to be moved towards the front sufficiently to open the hind end of the hive $\frac{1}{4}$ inch. Taking away the entrance blocks, the air passes between every frame from the bottom to the top and out at the rear end. The cover box is then lifted up one inch at the back end, and an entrance block put between it and the hive.

Should the cover boxes not allow a forward movement of the honey-board, two $\frac{1}{4}$ inch thick sticks put between it and the hive, would have the same effect. Bees in hives so ventilated did not lay out in the hottest weather last summer.

JEFFERSON, WIS. A. GRIMM.

[For the American Bee Journal.]

Singular Case.

About the beginning of the month of July last, I caged a queen bee for the purpose of raising another. In the hurry of business this queen was overlooked for nearly a month. After basswood blossoms were over I happened to examine that hive again, and found the queen alive, but both her wings were missing, and a young queen at liberty, which had just commenced laying. I concluded to divide the stock for an experiment. When this was done, I set the caged queen free in the queenless part. About ten days afterwards I examined both stocks again, and in the hive in which I had placed the wingless queen, I found a young queen just hatched, and several queen cells torn open, together with a large amount of brood of nearly all ages. Not finding the wingless queen, I concluded that she had been superseded by the workers. About a week later I re-examined the hive, and found the young queen very slender and apparently unimpregnated, but the combs contained eggs, larvæ, and sealed brood in plenty. After a careful search, I discovered my wingless queen on a brood comb, and immediately removed her. Two days later the young queen had commenced laying. All this, however, would not have presented anything strikingly curious to me. About nine days later, I happened to think of this stock of bees, and concluded to take another look inside. I found the latter queen laying, with a large amount of larvæ and sealed brood, and a number of sealed queen cells. I removed the queen and gave her to a queenless colony; but she was probably killed, as I found no trace of her afterwards.

Can any one explain the singular behavior of this stock of bees? Were there two parties of bees in the hive, and did each maintain its independency? Or was the last taken queen imperfect too, though not showing it in her appearance.

A. GRIMM.

JEFFERSON, WIS.